

OCT 16 1900

U. S. DEPARTMENT OF AGRICULTURE.

REPORT FOR SEPTEMBER, 1900.

WISCONSIN SECTION

OF THE

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

UNDER DIRECTION OF

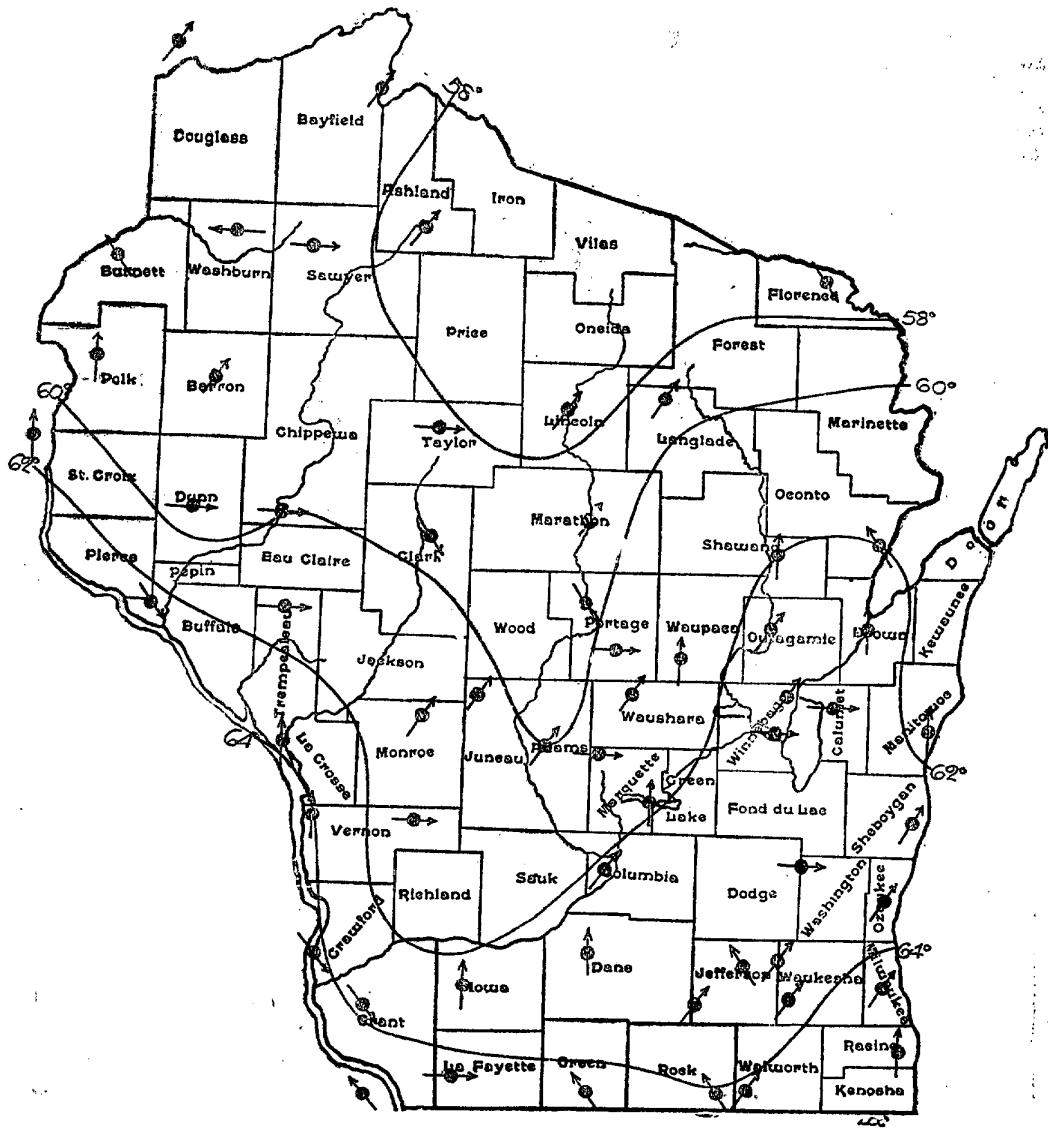
WILLIS L. MOORE
CHIEF OF WEATHER BUREAU

BY

W. M. WILSON,
Section Director, Milwaukee, Wis.



Mean Temperature and Prevailing Wind Direction.



U. S. DEPARTMENT OF AGRICULTURE,

CLIMATE AND CROP SERVICE
OF THE
WEATHER BUREAU.

CENTRAL OFFICE: WASHINGTON, D. C.

WISCONSIN SECTION,
W. M. WILSON, Section Director,
MILWAUKEE, WIS.

VOL. V. MILWAUKEE, WIS., SEPTEMBER, 1900. No. 9.

The West India Hurricane of September 1-10, 1900.

Several times during the present summer there have been indications over the Lesser Antilles of the possible development of one of those tropical storms which are the most dreaded characteristics of the locality and season, but it was not until the first day of September that the particular storm under discussion assumed definite formation and progressive movement. It is true that for two days previous falling pressure and some abnormal movement of the cirrus clouds had given slight premonitory signs of the approaching disturbance, but not more than on many previous occasions, and two days passed before the assurance came that a tropical storm was really in progress.

On the morning of September 1 the storm was central south of the Island of Santo Domingo in about latitude 18° north and longitude 70° west. It moved slowly northwestward, and by the morning of the 4th it was apparently central south of the middle Cuban coast, in about latitude 22° north and longitude 81° west. Previous to this time the pressure had been falling steadily but slowly as the center of disturbance advanced, but there were simply torrential rains, without destructive winds. During the 4th, however, the direction changed to a more northerly course, the pressure began to decrease more rapidly, and the winds to increase in force, and by the morning of the 5th the center had passed over western Cuba to the channel between Havana and Key West, causing high winds over western Cuba and extreme southern Florida.

At this time it became necessary to determine, if possible, the future course of the storm, as its center was now near the place where a recurving to the north was probable. Decreasing pressure over the interior of the country east of the Mississippi River indicated that a path would be opened northwestward along the Atlantic Coast, and warnings and advisory messages to that effect were accordingly issued. At the same time barometric conditions over the northwest were such that

with a rapid eastward movement of the high area then covering that section, the tropical storm would be forced to continue moving in the direction which it had then and proceed over the Gulf of Mexico. To guard against every possible contingency advisory messages were also sent to all middle and west Gulf ports, giving full information concerning the movement of the storm center and its possible extension to their territory.

On the morning of the 6th the center was slightly north of Key West and northeast gales were general over southern Florida, Jupiter reporting a velocity of 48 miles per hour, and Key West one of 40 miles. By the evening of the 6th the storm was near the Florida coast, a short distance south of Tampa. Then came a sharp turn to the west, and on the morning of the 7th it was in the Gulf of Mexico, apparently about two hundred miles south of the Mississippi coast.

Northerly gales were holding full sway over the middle Gulf coast, Port Eads, La., reporting a maximum velocity of 56 miles an hour from the northeast. The storm warnings which had been displayed on the previous day, as far west as New Orleans, were now extended along the Texas coast, and on the morning of the 8th the storm had nearly reached that locality. The coast of Texas was reached by the storm during the afternoon. At 3:40 p. m., Galveston reported a barometer reading of 29.22 inches, a wind velocity of 44 miles an hour from the northeast, unprecedentedly heavy sea swell and high tide from the southeast, and about one-half the city streets under water.

This storm had occupied more than a week in reaching Galveston and seemed to give promise of dissolution on the morning of the 10th in the dry regions of Oklahoma and Indian Territory. The barometric development on the night of the 10th, however, favored an eastward movement of the storm, and warnings were sent out on the morning of the 11th, when the center of the storm was in western Iowa. During the next twenty-four hours the storm moved east-northeast at a rate of about 50 miles per hour, crossing Lake Michigan in the vicinity of Milwaukee, and passing thence nearly due east to Montreal.

The influence of the storm on Lake Superior was chiefly felt in fresh to brisk northwest winds on the 11th and 12th. South of the storm track the winds were mostly brisk to high southerly to westerly. Some high velocities were recorded, as, for instance, at Chicago and Buffalo, but generally the maximum velocities ranged from 40 to 50 miles per hour. On the north side of the storm track the winds were mostly northwesterly with maximum velocities ranging from 30 to 40 miles per hour.

High southwest, shifting to northwest, gales prevailed Tuesday night on all the lakes except Lake Superior, and the winds continued high northwesterly during Wednesday. The damage to shipping which resulted from the storm was not

large, probably on account of the fact that many of the smaller craft were tied up in port.—Extracts from official papers issued by the Weather Bureau.

Thunderstorms.

Thunderstorms were reported during August as follows, the figures following the name of the station signifying the date: Koepenick, 1, 2, 5, 11, 22, 25, 28; Spooner, 22; Eau Claire, 1, 2, 15, 25; Grand River Locks, 2, 24, 25; Hillsboro, 4, 25; Manitowoc, 2, 25; Menasha, 1, 2, 15, 20, 25; New London, 24, 25, 28; Pepin, 1, 8, 14; Pine River, 1, 2, 5, 11, 19, 25, 26, 28; Sheboygan, 3, 12; Valley Junction, 2; Viroqua, 1; Waukesha, 2, 9, 24, 25; Beloit, 15; Harvey, 26, Lancaster, 1, 24; Waukesha, 2, 26.

Notes and Comments.

Mr. F. E. Evans, Observer at Florence, recorded the first snow of the season on the 16th.

Viroqua, Vernon county: The frost of the 16th did no damage except on low land. Tomato, squash and other vines are as green as during August. Corn is the best ever raised in this county. Even southern corn is well ripened. Pastures and meadows are in the very best possible condition, and early sown winter wheat covers the ground nicely. Apples an excellent crop. W. F. Alexander.

Dodgeville, Iowa county: The weather throughout the month has been remarkably fine. No frost to kill vegetation; only the tenderest flowers injured. Chas. H. Berryman.

Harvey, Jefferson county: The month was slightly warmer than usual and the rains were frequent but not excessive. Only one light frost occurred during the month and on high land vegetation is still green and growing. Corn is an excellent crop; hay light, but quality good, while oats are below the average. Pastures good. S. N. D. Smith.

Hartland, Waukesha county: A light frost occurred on the 17th, but vines are still growing. Dr. C. M. Skinner.

Prairie du Chien, Crawford county: A light frost occurred on the morning of the 17th but resulted in no material damage. The ground is in good condition for fall ploughing. Winter grain is doing well. John Ducharme.

A number of Voluntary Observers are furnishing their local papers with a weekly statement of temperature and rainfall for publication. Editors are usually glad to obtain these reports, as they are read with interest by farmers generally. Suitable forms for reports of this character can be obtained from the Section Director.

Mr. Phil Bock, the veteran Observer at Spooner, will shortly remove to West Superior, and the work at that point will in future be in charge of Mr. C. B. Richards.

Summary of Weather Conditions.

Temperature: The mean temperature for the month was 61.1°, which is about 1.2° above the September normal and about 4.0° warmer than the same month last year. The excess in temperature was quite evenly distributed throughout the State, although a few stations in the northern and western counties recorded a slight deficiency. The month opened with moderately high temperatures for the season, several stations recording a maximum temperature of 90° or higher on the 1st. The warmest period for the month culminated about the 5th, when the highest temperature for the month was recorded at thirty-six stations. The coldest period occurred on the 17th and 18th in the central and southern sections and on the 27th and 28th in the northern section. Killing frosts were quite general in exposed localities in the central and northern counties on the 17th and 18th, but resulted in no material damage. The highest temperature for the month, 97°, occurred at Prairie du Chien on the 6th and the lowest, 28°, at Medford on the 17th, at Hillsboro on the 18th and at Knapp and Hayward on the 27th.

Precipitation: The average precipitation for the State was 5.20 inches, which is about 2.00 inches above the September normal. The excess was mostly confined to the central and northern sections and exceeded six inches at several stations. In the southern section of the State the rainfall was generally light, all except four stations recording a deficiency for the month. The heaviest rains of the month occurred on the 10th and 11th, during the passage of the tropical cyclone across the State, 27 stations out of 39 in the central and northern sections recording precipitation in excess of one inch during the 24 hours. At Shawano 4.25 inches of rain fell from 11 a. m. to 6 p. m. on the 11th, and at Osceola 3.75 inches fell from 6 p. m. of the 10th to 11 a. m. of the 11th. From the 19th to 29th the rains were frequent and quite general. The greatest monthly precipitation, 9.46 inches, occurred at Knapp, and the least, 1.51 inches, at Oshkosh.

ERRATA. July Report: Stevenspoint, total precipitation, 8.58 should be 8.28; foot note on page 5, "special rainfall stations" should refer to Ashland instead of Koepenick.

August Report: Beloit, total precipitation, 4.91, should be 5.11. Prentice, mean minimum temperature, 61.5, should be 61.7; mean temperature, 71.8 should be 72°.

Annual Summary for 1899: Watertown, total precipitation for April, 2.52, should be 1.95; annual precipitation, 30.68, should be 31.31. Knapp, mean temperature for June, 65.3, should be 65.2. Prentice, mean temperature for October, 45.2, should be 45.7. Stevenspoint, mean temperature for November, 39.5, should be 39.4. Brodhead, mean temperature for September, 61.0, should be 61.1. Gratiot, mean temperature for May, 58.4, should be 58.8. Harvey, annual mean temperature, 46.1, should be 46.0.

CLIMATOLOGICAL DATA FOR THE MONTH.

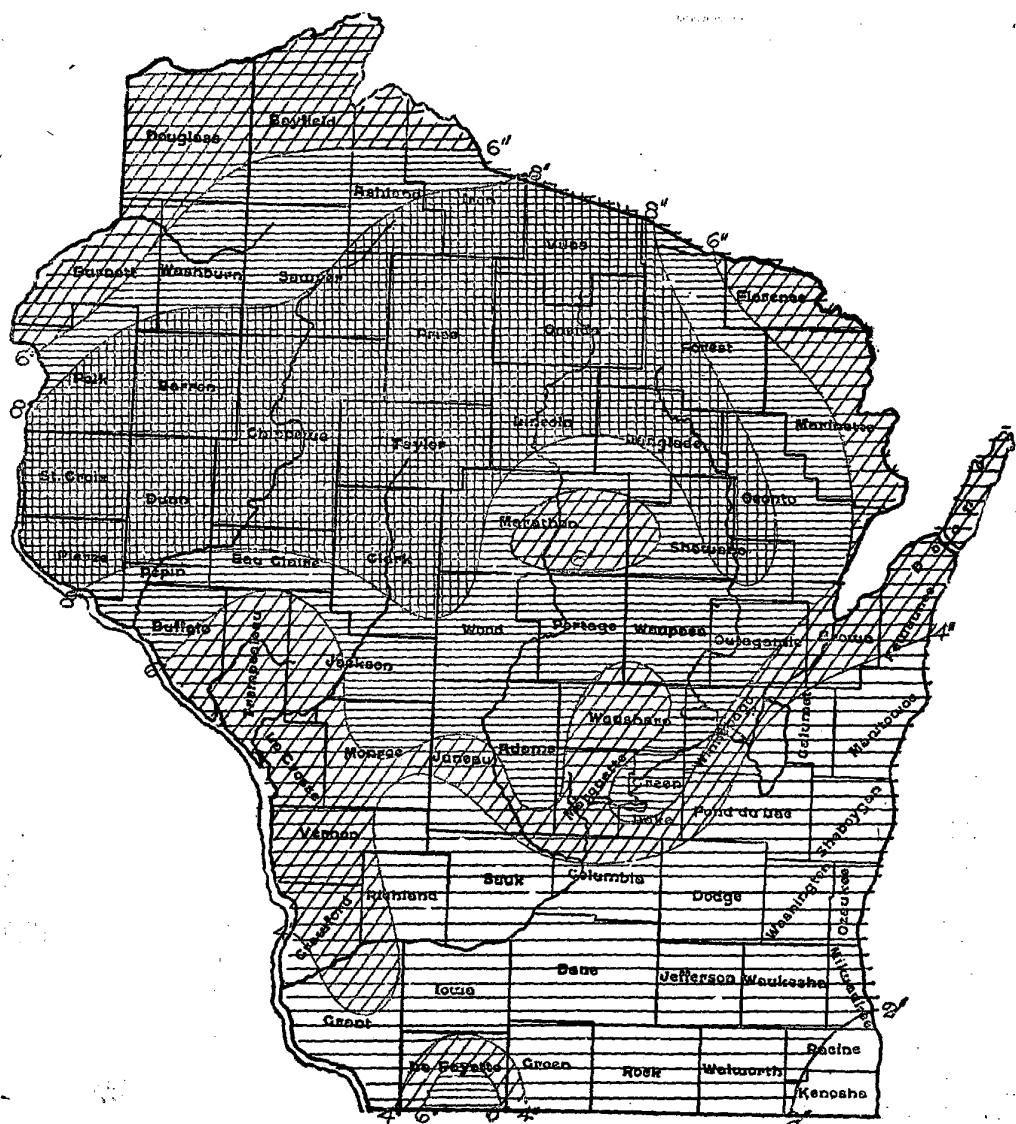
STATIONS.	COUNTIES.	Elevation—feet.	Length of record—years.	Temperature—in degrees Fahrenheit.				Precipitation—in inches.				Sky.			Pervailing direction of wind.	Observers					
				Mean.	Departure from the normal.	Highest.	Date.	Greatest daily range.	Length of record—years.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number clear days.	Number partly cloudy days.	Number cloudy days.					
Northern Section																					
Ashland*.	Ashland.	-	-					4.40	+1.40	.93		14	2	25	3	sw.	J.G.Uptegrove, C. & N.W.R.R. Co.				
Antigo.	Langlade.	1,489	4	62.4	+4.4	83	8	42	10	31	8	9.30	+6.20	2.20	6	3	11	5	sw.	E.W.Pierce	
Barron.	Barron.	1,115	8	59.4	+3.2	82	1	34	28	9	4.80	+1.80	.80		11				sw.	E.A.Clowater.	
Bayfield.		600	0	59.4	-2.0	84	1	29	18	8	8.07	+5.17	2.24		12	14	8	8	sw.	Chas.E.Friedrich.	
Butternut.	Ashland	1,400	8	55.0																	
Duluth, Minn.	Douglass.	670	30	58.6	+2.4	83	5	36	27	23	30	4.80	+.94	1.48		13	10	9	11	sw.	Weather Bureau.
Florence.	Florence.	1,264	7	57.4	0	84	1	29	28	33	8	5.67	+2.83	1.75		9	16	3	10	nw.	F.S.Evans
Grantsburg.	Burnette.	1,100	6	59.4	+1.6	89	5	29	27	35	8	4.60	+1.70	1.90		8	12	10	8	se.	Th.Olsen.
Hayward.	Sawyer.	1,197	7	58.8	+1.3	86	1	28	27	36	7	7.93	+5.03	2.85		12	13	11	5	w.	J.G.Adams.
Heafford.	Lincoln.			58.0	-1.5	86	1	31	18	34	2	8.36	+5.43	3.00		9	15	2	13	sw.	E.F.Greyson.
Knapp.	Dunn.	2	58.0	-1.0		89	4	28	27	34	2	9.46	+6.51	2.50		12	14	10	6	w.	Rev.C.A.Smith.
Koepenick ††.	Langlade.	1,683	9	62.0	+3.0	80	30	50	3	34	8	8.10	+5.14	1.70		14	0	28	2	sw.	E.S.Koepenick.
Medford.	Taylor.	1,420	59.0	-1.5		90	1	28	17	32	8	7.95	+5.05	2.00		10	5	17	8	w.	William Zeit.
Oconto.	Oconto.	590	9	62.5	+2.3	91	5	37	28	32	9	6.32	+3.42	1.64		11	14	10	6	se.	W.K.Smith.
Osceola.	Polk.	806	9	59.4	+1.4	90	5	29	27	34	9	8.14	+5.14	3.75		10	16	5	9	s.	C.W.Staples.
Prentice.	Price.	2																			
Spicer.	Washburn.	1,104	6																		
Wausauke.	Marinette.	3																			
Middle Section																					
Amherst.	Portage.	1,200	9	61.0	+.7	90	5	35	19	34	9	7.05	+4.15	2.95		7	7	17	6	w.	A.J.Smith.
Chilton.	Calumet.	925	7	63.5	+1.5	60	1	35	18	46	7	2.80	-2.20	1.00		5	18	8	4	w.	G.M.Morrissey.
City Point.	Jackson.	973	6	62.1	+1.2	92	5	36	29	34	8	6.85	+3.80	1.63		9	11	9	10	sw.	Christ Nelson.
Easton.	Adams.	1,073	5	58.9	+2.5	92	5	30	18	37	4	4.16	+1.96	1.10		12	11	2	17	w.	W.A.Eddy.
Eau Claire.	Eau Claire.	600	8	61.6	+2.1	92	5	35	27	28	8	8.73	+5.03	2.89		15	11	7	12	w.	J.Swearingen.
Fond du Lac.	Fond du Lac.	800	8	62.8	+.8	90	1	36	18	31	8	3.06	+.06	.85		10	10	13	7		
Green Bay.	Brown.	616	14	63.4	+2.9	90	5	42	18	30	14	5.09	-2.23	1.38		14	7	8	15	s.	Weather Bureau.
Grand River Locks.	Marquette.																				
Hillsboro.	Vernon.	8	61.6	-.2		92	5	28	18	39	8	3.78	+.28	1.45		10	8	19	3	w.	Jerry Parkinson.
La Crosse.	La Crosse.	714	28	63.5	+1.9	93	5	40	27	28	28	4.71	+.49	2.05		14	9	10	11	s.	Weather Bureau.
Casco.	Kewaunee.	7																			
Manitowoc.	Manitowoc.	616	9	61.0	+1.1	89	5	39	18	37	37	3.27	+.27	1.30		9	8	17	5	s.	Dr.P.R.Minahan.
Meadow Valley.	Juneau.	974	9	61.2	+.2	94	5	29	18	38	9	5.55	+3.05	1.94		10	4	26	6	sw.	Johanna Lups.
Menasha.	Winnebago.	764																			
Neillsville.	Clark.	600	9	60.2	+.7	90	5	32	17	32	9	8.01	+5.15	1.95		10	10	0	20	nw.	Geo.T.Allanson.
New Holstein.	Calumet.	925	9																		
New London.	Outagamie.	702	5	61.6	+1.1	92	5	36	18	35	5	6.48	+3.48	2.00		9	14	9	7	w.	Aug.A.Paulson.
Oshkosh.	Winnebago.	744	9	63.2	+1.2	86	4	40	27	35	9	1.51	-1.49	.50		4	0	19	11	w.	A.H.Pape.
Pepin.	Pepin.	691	6	61.6	+.6	92	5	32	26	34	9	7.33	+4.33	1.52		15	11	11	8	nw.	F.E.Mitchell.
Pine River.	Waushara.																				
Shawano.	Shawano.	800	9	62.0	+2.5	90	5	37	18	33	9	8.02	+5.07	4.25		11	9	11	9	s.	Col.W.S.Wood.
Sheboygan.	Sheboygan.			63.6	+3.1	94	5	40	18	33	10	3.99	+1.04	1.64		10	9	21	0	sw.	Louis C.Meyers.
St. Paul Minn.	St. Paul Minn.	831	7	61.6	+1.8	91	5	37	18	39	10	6.39	+6.39	4.21		12	10	10	10	s.	Weather Bureau.
Stevens' Point.	Portage.	1,113	30	59.9	-.6	90	5	34	18	35	7	8.81	+5.91	2.25		9	14	3	13	nw.	Prof.G.E.Culver.
Valley Junction.	Monroe.	8	60.7	-.3	92	5	29	18	38	7	7.18	+4.00	2.01		15	12	8	10	sw.	J.P.Shambaugh.	
Viroqua.	Vernon.	1,412	9	61.4	-.6	90	5	34	17	30	9	4.85	+.85	.97		11	7	5	18	s.	F.W.Alexander.
Waupeaca.	Waupeaca.	857	5	61.4	+.9	90	5	36	18	33	4	7.02	+4.07	2.85		10	12	6	12	s.	J.H.Flapp.
Wausau.	Marathon.	1,212	5	59.0	0	89	5	33	26	35	5	7.88	+4.92	1.85		12	15	3	12	sw.	Ernest A.Dunn.
Westfield.	Marquette.	925	9	62.4	+1.6	91	5	35	18	32	9	5.35	+2.25	1.28		10	11	9	10	w.	W.Phillips.
Whitehall.	Trempealeau.	675	7	60.6	-.4	90	5	30	18	37	7	5.20	+2.25	1.80		11	15	5	10	w.	P.H.Johnson.
Beloit.	Rock.	750	9	65.2	+2.8	88	5	38	18	29	8	3.01	-.60	.83		8	4	11	15	se.	Clement E.Rood.
Beloit, No. 2.	Rock.																				
Brodhead.	Green.	812	3	64.0	+1.2	92	10	34	18	36	3	2.40	-1.32	.47		11	13	14	3	se.	R.J.Day.
Dubuque, Ia.	Jefferson.	651	27	65.4	+2.3	92	5	38	18	31	27	3.34	-.75	1.10		12	12	11	7	se.	Weather Bureau.
Delavan.	Walworth.	920	8	64.2	+1.8	92	10	37	18	32	8	2.47	-.98	1.12		6	16	10	4	sw.	S.W.Gregory.
Dodgeville.	Iowa.	1,116	4	62.7	-.3	92	5	33	18	34	4	3.65	+.15	1.45		10	14	10	5	s.	C.H.Berryman.
Gratiot.	Lafayette.	1,016	4	67.6	+4.4	90	13	32	18	43	4	7.40	+3.55	3.00		10	19	2	12	sw.	E.N.Botsford.
Harvey.	Jefferson.	897	8	63.8	+1.4	91	10	36	18	32	8	2.60	-.40	.78		10	16	16	4	sw.	S.N.D.Smith.
Hartford City.	Washington.	1,017	3																		
Hartland.	Waukesha.	3	63.3	+1.3	89	25	35	18	32	3	2.56	-.44	.89		10	13	14	3	sw.	S.T.Crandal.	
Lancaster.	Grant.	1,070	9	62.2	-.1	91	5	35	17	41	9	4.77	+1.02	1.23		9	6	13	9	nw.	Dr.C.M.Skinner.
Madison.	Dane.	955	9	63.6	+.8	86	10	42	17	25	9	2.89	-.11	.67		10	6	12	12	s.	Edward Pollock.
Milwaukee.	Milwaukee.	681	30	64.9	+3.7	91	10	43	17	29	30	3.51	+0.65	2.04		9	10	10	10	sw.	Washburn Obs'y.
Portage.	Columbia.	809	4	62.2	+.4	90	5	35	18	30	4	2.90	-.35	.85		9	16	7	7	sw.	Weather Bureau.
Port Washington.	Ozaukee.	717	8	61.2	+.2	90	5	35	17	34	7	2.13	-.77	.70		8	6	16	5	sw.	James Clear.
Prairie du Chien.	Crawford.	690	9	65.4	+2.6	97	6	38	17	36	9	3.10	-1.00	1.10		11	9	5	16	nw.	R.C.Kann.
Racine.	Racine.	633	4	65.0	+3.0	91	5	41	17	32	4	1.82	-1.08	.70		7	14	9	7	s.	John Ducharme.
Sharon.	Walworth.	1,028	8																		
Watertown.	Jefferson.	897	9	62.6	+.6	90	5	33	18	32	8	2.74	-.26	.64		10	10	17	3	se.	John S.Tevens.
Waukesha.	Waukesha.	970	8	63.0	+1.0	87	5	40	17												

DAILY MAXIMUM AND MINIMUM TEMPERATURES DURING THE MONTH

CLIMATE AND CROPS: WISCONSIN SECTION

SEPTEMBER, 1900.

Total Precipitation for the Month.



DAILY PRECIPITATION DURING THE MONTH OF SEPTEMBER, 1900.

STATIONS.	DAY OF MONTH																														Total	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Northern Section																																
Ashland.....	.5658	.0525	.25	.9368	.022612	.40	10	4.40
Antigo.....	1.00	.....	1.90	2.15	2.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.30
Barron.....50	.8010	.30	.408020	.2050	4.80
Bayfield.....	1.445805	.75	.08	2.2458	1.755059	.07	8.07
Butternut.....	8.07
Duluth.....5379	.0245	1.43	.092059	.02	.01	.04	.62	.01	4.80
Florence.....	1.3545	.20	1.755748	.27	.18	5.67
Grantsburg.....	20	.....	20	1.90	1.15	.....	20	1.90	1.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.60
Hayward.....	.30	.60	.....	.90	.....	.....	1.10	2.85	.....	.....	.....	.....	.....	.....	.....	.....	.18	.....	.....	.85	1.15	.....	.45	.15	.....	.....	.....	.....	.....	.....	7.93
Heafford Junction.....	.70	3.00	.....	.....	.....	.....	.46	1.96	.....	.....	.....	.....	.....	.....	.....	.....	.12	.....	.....	.44	.....	.73	.....	.45	.....	.....	.....	.....	.....	.....	8.36
Knapp.....	.....	2.25	.....	.12	.....	.....	.20	1.30	2.50	.....	.....	.....	.....	.....	.....	.....	.....	.20	.....	.....	1.15	.12	.08	.....	.20	.22	.....	.....	.....	.....	9.46
Koepenick.....	10	1.70	.....	1.40	.....	.....	1.10	1.40	.....	.....	.....	.....	.....	.....	.....	.....	1.10	.....	.....	.30	.10	.....	.70	.....	.80	.....	.....	.....	.....	.....	8.10
Medford.....	1.65	.....	.50	.....	.....	.....	.90	2.00	.....	.....	.....	.....	.....	.....	.....	.....	.20	.....	.....	.85	.20	.....	.70	.25	.....	.....	.....	.....	.....	.....	7.95
Oconto.....	.22	.82	.04	.....	.19	.....	.....	.05	1.38	.26	.....	.....	.....	.....	.....	.....	.96	.....	.....	.50	.03	.....	.62	.38	.56	.....	.61	.....	.....	.....	6.32
Osceola.....	.....	.65	.....	.....	.....	.....	.40	1.35	3.75	.....	.....	.....	.....	.....	.....	.....	.45	.....	.....	.66	.....	.28	.....	.05	.....	.....	.....	.....	.....	8.14	
Prentice.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.31
Spooner.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.38	.40	.35	.32	.....	.78	1.60	.37	.....	1.17	4.55
Middle Section.																																
Amherst.....	2.95	.....	.15	.....	.....	.....	.....	2.25	.....	.....	.....	.....	.....	.....	.....	.....	.25	.....	.....	.....	.....	.....	.....	.....	.65	.45	.....	.35	.....	.....	7.05
Chilton.....	1.00	.....	.....	.....	.....	.....	.....	1.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.30	.....	.....	.....	.....	.....	2.80
City Point.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Easton.....	.20	.....	.20	.....	.03	.....	.07	.....	.....	.....	.....	.....	.....	.....	.....	.....	.10	.....	.....	.04	.....	.38	.07	.....	.....	1.10	.03	.62	.....	.....	4.16
Eau Claire.....	.04	2.33	.....	.20	.....	.18	.86	1.89	.....	.....	.....	.....	.....	.....	.....	.....	.16	.04	.....	.79	.09	.....	.38	.....	.33	.12	.08	.....	.24	.....	8.73
Fond du Lac.....850367	.021024	.03552804	.25	3.06
Green Bay.....	.50	1.38	.....	.....	.....	.....	.....	.63	1.13	.....	.....	.....	.....	.....	.....	.....	.01	.....	.....	.53	.04	.....	.11	.30	.28	.50	.....	.14	.28	.....	5.09
Grand River Locks.....	.....	.50	.....	.12	.....	.....	.....	.90	.....	.....	.....	.....	.....	.....	.....	.....	.06	.....	.35	.....	.33	.....	.14	.04	.22	.35	.....	.30	.45	.....	6.36
Hillsboro.....	.....	.68	.....	.15	.....	.....	.12	.33	.....	.....	.....	.....	.....	.....	.....	.....	.10	.....	.....	.05	.50	.03	.....	*.45	.....	.37	.....	.....	.....	.....	3.78
La Crosse.....	.....	.03	.....	.....	.....	.....	.05	.05	2.05	.....	.....	.....	.....	.....	.....	.....	.10	.....	.....	.05	.32	.06	.....	.04	.....	.36	.08	.64	.....	3.71	
Casco.....	.....	1.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.27
Manitowoc.....	1.30	.....	.....	.....	.01	.....	.....	1.78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.55
Meadow Valley.....	.83	.....	.....	.....	.....	.....	.....	1.94	.....	.....	.....	.....	.....	.....	.....	.....	.02	.09	.....	.66	.10	.....	.96	.67	.65	.....	.63	.....	.....	.....	7.47
Menasha.....	.07	2.98	.....	.....	.....	.....	.....	1.80	.....	.....	.....	.....	.....	.....	.....	.....	.04	.....	.....	.55	.22	.....	.02	.09	.20	.70	.....	.....	.....	.....	8.01
Neillsville.....	.....	1.50	.....	.35	.....	.....	.50	.33	1.95	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.66
New Holstein.....	.....	.....	.....	.....	.....	.....	.....	1.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.48
New London.....	.07	2.00	1.08	1.51
Oshkosh.....50	7.33
Pepin.....	1.32	.....	.05	.....	.....	.....	.31	.87	.93	1.36	.08	.20	.....	.....	.....	.....	.34	.23	.08	.....	.68	.22	.....	.18	.....	.20	.....	.....	.....	.....	3.66
Pine River.....	.....	.....	.....	.....	.05	.....	.01	1.04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.33	.11	.....	.....	*.79	.88	.....	.45	.....	.....	.....	3.66
Shawano.....	1.44	.....	.06	.....	.07	.....	.....	4.25	.....	.....	.....	.....	.....	.....	.....	.....	.04	.....	.....	.64	.08	.....	.10	.....	*.44	.38	.....	.52	.....	.....	8.02
Sheboygan.....	1.64	.....	.....	.....	.....	.....	.....	1.44	.72	.....	.....	.....	.....	.....	.....	.....	.03	.....	.15	.04	.....	.09	.15	.44	.....	.18	.....	.....	.....	3.99	
St. Paul, Minn.....	.51	.....	.06	.....	2.03	.01	4.21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.92	.....	.....	.15	.06	.62	.....	.18	.24	.....	.14	.....	9.39		
Stevens' Point.....	2.25	.....	.14	.....	.....	.....	1.73	2.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.64	.03	.....	.98	.79	1.15	.....	.....	.....	.....	8.81	
Valley Junction.....	.....	.04	.86	.....	.23	.....	.04	.34	2.01	.....	.....	.....	.....	.....	.....	.....	.18	.....	.....	.75	.08	.....	.09	.59	.45	.91	.52	.09	.....	7.18	
Viroqua.....	.....	.58	.....	.12	.....	.....	1.12	.....	.72	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.55	.07	.....	.....	.97	.92	.36	.....	.39	.....	4.85	
Waupaca.....	45	2.85	.....	.....	.....	.....	1.12	.....	1.30	.....	.....	.....	.....	.....	.....	.....	.08	.07	.....	.....	.52	.05	.....	.80	.42	.....	.48	.....	.....	7.02	
Wausau.....	.01	1.61	.....	.....	.....	.....	1.12	.....	.48	1.85	.....	.....	.....	.....	.....	.....	.05	.....	.....	.54	.08	.....	.78	.....	1.03	.96	.....	.....	3.77		
Westfield.....	.....	.15	.....	.....	.....	.....	.34	.....	.08	1.06	.....																				